ME-1871

SIMPSON MODEL 389-3L
TEMPERATURE TESTER

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Simpson

INSTRUMENTS THAT STAY ACCURATE

70-03-25-01

MODEL 389-3L
TEMPERATURE TESTER

FEBRUARY 15, 1970

SIMPSON ELECTRIC COMPANY

5200 W. Kinzie St., Chicago 44, Illinois, ES 9-1121
Long Distance Dial 312
In Canada, Bach-Simpson, Ltd., London, Ontario

OPERATING INSTRUCTIONS

MODEL 389-3L TEMPERATURE TESTER

The Model 389-3L Temperature Tester measures temperatures from −50°F to +250°F in two ranges, one from −50°F to +100°F, the other from +100°F to +250°F. This instrument is supplied with one 15 foot general purpose thermistor lead. It will also accommodate two additional leads so that readings at three different locations can be taken in quick succession. Accuracy is within 3°F for any scale reading. Near center scale, the accuracy is within 2°F.

When surface temperature measurements are to be made, the Simpson Part Number 0790, 15 foot probe, is recommended. When free air ambient temperature measurements are to be made, the Simpson Part Number 0789, 15 foot probe, is recommended.

1. PREPARATION FOR USE.

a. Plug leads into connectors marked 1, 2, and 3 on top of the meter case.

b. With the SELECTOR switch OFF, meter should read full scale or 100° on the low range. If meter does not read 100°, correct reading by turning the zero adjusting screw on the face of the meter cover.

c. Set the SELECTOR switch to the ADJ. (adjust) position. The meter should read 32°. If it does not, correct reading by removing plug on top of case marked ADJ. and turning screwdriver control. When it becomes impossible to correct reading to 32°, replace battery (see paragraph 3).

2. MEASURING THE TEMPERATURE.

a. Locate probes at the points where temperature readings are desired. When measuring air temperature, allow several minutes for the temperature of the probe sensing element to stabilize before taking a reading. Liquid temperatures can be read within a few seconds after complete immersion of the probe body. The general rule is to allow sufficient time for the probe to attain the same temperature as the object being measured.

b. Set the PROBE SELECTOR switch to the position selected for the first reading.

c. Set the SELECTOR switch to the range most likely to be required, then take reading. Change range if necessary.

d. Set PROBE SELECTOR switch to other positions being used and take readings. Rapid, successive readings can be taken as often as desired.

CAUTION

Do not use probe in acids or other solutions which will attack the brass shell of the probe or the plastic cord.

3. BATTERY REPLACEMENT. Due to the extremely low current used, the battery should have a long life with normal use. Replace battery only if unable to adjust reading to 32° as in paragraph 1c. A standard size "C" flashlight battery, or equivalent, will give satisfactory service. Access to the battery is gained by removing the four screws on the bottom of the case.

SIMPSON MODEL 389-3L

REPAIR PROCEDURES

Preliminary Inspection: Remove the 4 bolts from the case, remOve the tester from the case and check the 1.5 volt "C" cell to be certain it hasn't leaked chemicals over the battery retainer. Further, make certain the contacts on the battery retainer are clean, and a good cell is inserted before calibration and testing.

Equipment Required:
a. Temperature checker(Schematic included).
b. Standard Themometers(0-250°F range).
c. Supply of ice water(at least 50% Ice by volume).
d. Supply of boiling water.
e. Test leads terminated in a phono plug to fit jacks 1-2-3.

Calibration-Preliminary:
a. Set the tester RANGE selector switch OFF.
b. Set the pointer directly on full scale 100/250 with zero adjusting screw.
c. Connect the test leads, with phono plug, to the terminals of the temperature checker and plug the phono plug into Jack #1 of the 389-3L tester.
d. Set the checker to the "-50°" position.
e. On the 389-3L tester, set the RANGE selector switch to the LOW position, and the PROBE switch to #1.
f. Turn the "ADJ" pot. until the meter reads "-50."
g. Switch the checker to "32."
h. On the 389-3L tester, set the RANGE selector switch to "ADJ".
i. Turn the "CAL" rheostat until meter reads "32."
j. Set the RANGE selector switch back to "LOW."
k. Turn the knob, on the checker, through the following test points and observe the meter reading. The meter should stay within ± 1.5°F-(-50,+10,+32,+60,+100.)
l. Set the RANGE selector switch to HIGH, on the 389-3L tester.
m. Turn the knob, on the checker, through the following test points and observe the meter reading. The meter should stay within ± 1.5°F(+100,+130,+150,+212,+250).

Remove test plug from Jack #1.

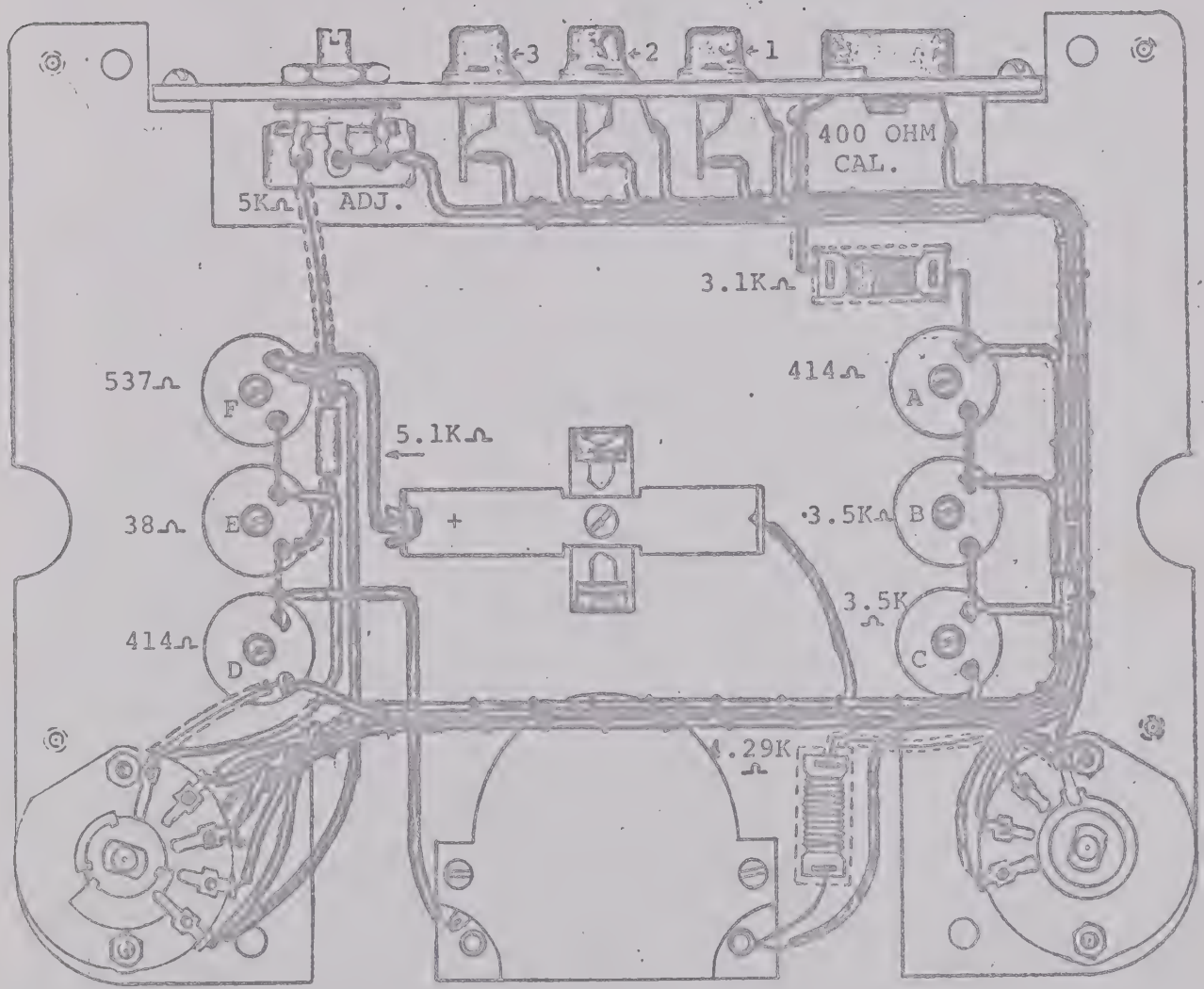
Calibration Final:
a. Insert 3 Probe Assemblies (0010) into Jacks 1-2-3.
b. Set the RANGE selector switch to "ADJ". The meter should read 32 degrees. If not, insert a screwdriver in hole marked "ADJ" and turn pot. until reading is correct.

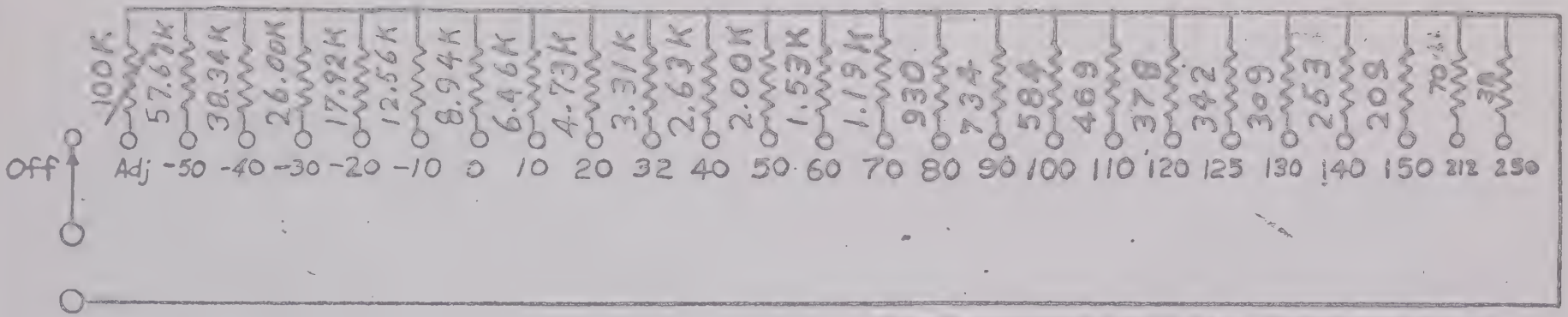
c. Set the RANGE selector switch to LOW.
d. Immerse all 3 probes in a mixture of water and ice cubes (at least 50% by volume), and agitate probes until the temperature reading is stabilized, as indicated by the Standard Thermometer, at 32°F.
e. Turn the Probe selector switch to all 3 positions. The meter indication at each position should be 32 degrees. If the reading is off, turn the ADJ control until the meter reads 32 degrees (Range selector in LOW position).
f. Turn the RANGE selector switch to ADJ position. If the reading changes, adjust the "CAL" pot until a reading of 32 degrees has been obtained.
g. Remove probes from ice water, allow probes to reach room temperature, then immerse all probes in boiling water (212 degrees, as checked by a Standard Thermometer).
h. Turn Probe selector switch to all 3 positions. The meter should indicate 212 degrees ± 2 degrees F.
i. Tolerance on all readings ± 2 degrees F.
j. Remove all probe connectors from the Jacks, insert tester in case, tighten 4 retaining bolts.

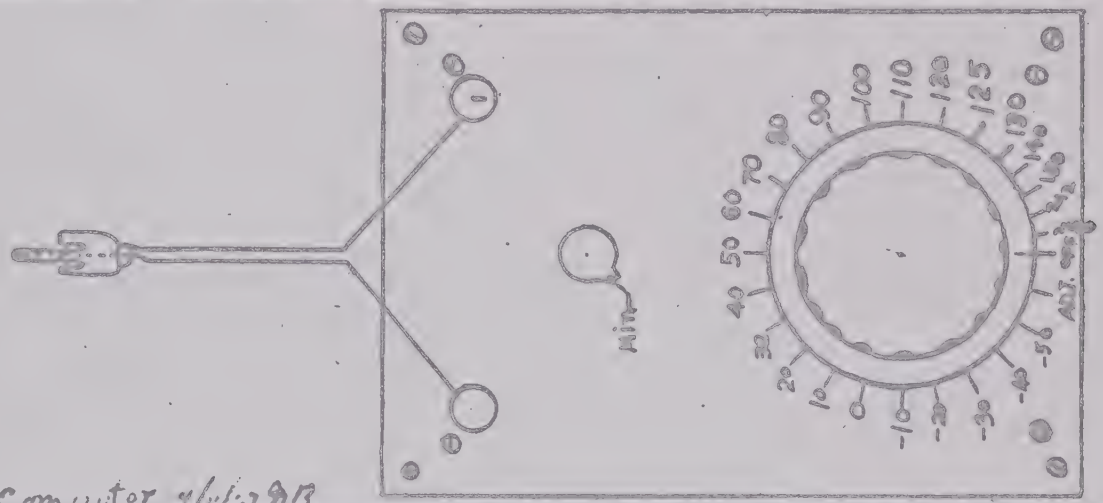
Place RANGE selector switch in OFF position.

MODEL 389-3L

INTERIOR VIEW







Res. value changed per computer 4/15/68 RB

2	Binding Post	1-11	1115	
1	SW Index	1-11	4813	
2	SW Deck	1-11	4869	
1	100K Pot	1-11	3876	
Req.	Name	Part Number		
ISSUE	REVISIONS	C. O. NO	APPROVED	

—REQD. PER UNIT | SCALE

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS ARE IN INCHES
DECIMAL TOL. ±
FRACTIONAL TOL. ±
ANGULAR TOL. ±
HOLE DIA. TOL. ±

DRAWN 11-17-53 | CHECKED

APPROVED PROD. ENGR. 8-4-67

APPROVED

APPROVED

APPROVED

USED ON
MODEL NO. 389-3L SPEC. NO.

PART OF ASSEMBLY DRG. NO.

RAW MAT'L PART NO. | AMOUNT/M PIECES

MATERIAL

SIZE

TEMPER OR HARDNESS

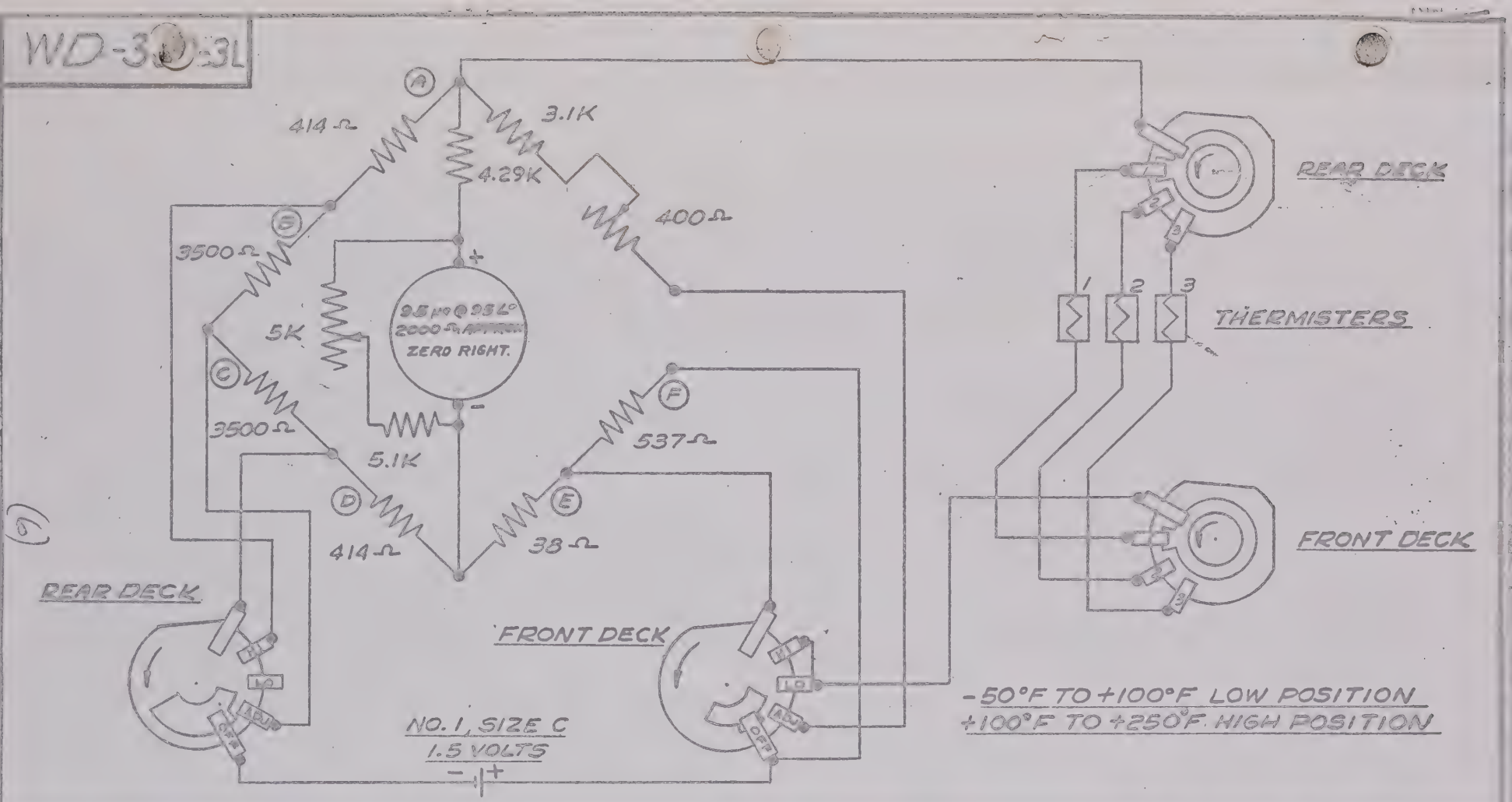
FINISH

SIMPSON ELECTRIC CO.
DIVISION OF AMERICAN GAGE & MACHINE CO.
5200 W. KINZIE ST. CHICAGO 44, ILL.

PART NAME
Temp. Tester
Ckt. Checker

PART NO. | PROJ. | ISSUE

WD-389-3L



				—REQD. PER UNIT | SCALE	USED ON MODEL NO. 389 SPEC. NO.	SIMPSON ELECTRIC CO
				UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES	TEMPATURE INDICATOR	DIVISION OF AMERICAN GAGE & MACHINE CO.
				DECIMAL TOL. ±	PART OF ASSEMBLY DWG. NO.	5200 W. KINZIE ST. CHICAGO 44, ILL.
				FRACTIONAL TOL. ±	RAW MAT'L PART NO. | AMOUNT/M PIECES	PART NAME
				ANGULAR TOL. ±	MATERIAL	DIAGRAM, SCHEMATIC
				HOLE DIA. TOL. ±	SIZE	
				DRAWN D.D. 1-7-58		
				CHECKED [illegible] 1-7-58	TEMPER OR HARDNESS	PART NO. WD-389-3L | ISSUE 1
				APPROVED [illegible] 1-7-58	FINISH	
				APPROVED [illegible] 1-7-58		
ISSUE	REVISIONS	C.O. NO	APPROVED	APPROVED		

DIETZGEN NO. 199 H AGEPROOF

SIMPSON ELECTRIC COMPANY
5200 W. KINZIE STREET
CHICAGO, ILLINOIS 60644
PHONE ES 9-1121

SIMPSON 389-3L TEMP TESTER

PART NUMBER	DESCRIPTION
	TESTER SECTION
1C-890349	CASE ASSY COMPLETE
03-320157	CASE LESS HANDLE
01-113234	CLIP CONDENSER
1C-860229	COMPONENT STRIP MECHANICAL ASSY
1C-860244	CONTACT BATTERY ARM ASSY
01-115671	EYELET 1/8 X 7/32
03-310812	HANDLE
01-117433	JACK-PHONO
01-115334	KNOB, WHITE ARROW & SET SCREW
01-401543	NUT 3/8-32 X 1/2 HEX
01-131552	NUT, HEX 4-40 X 1/4
01-113803	PLUG PHONO- TYPE
01-117426	PLUG SNAP
01-117329	POTENTIOMETER 5000 OHMS
01-113046	RESISTOR 5100 OHMS 10% 1/2 WATT
1C-675062	RESISTOR SPOOL ASSY 537 OHMS
1C-675063	RESISTOR SPOOL ASSY 38 OHMS
1C-675064	RESISTOR SPOOL ASSY 3500 OHMS
1C-675065	RESISTOR SPOOL ASSY 414 OHMS
1C-805078	RESISTOR BOBBIN ASSY 3100 OHMS
1C-805079	RESISTOR BOBBIN ASSY 4290 OHMS
01-113774	RHEOSTAT 400 OHMS
01-117432	RIVET NYLON 3/16 X 5/32
1C-860245	RIVETING COMPONENT ASSY
01-131488	SCREW 2-56 X 7/16 FIL HD
01-132322	SCREW 4-36 X 1/4 BD HD
01-133801	SCREW 4-36 X 3/16 BD HD
01-135793	SCREW 4-40 X 1/4 BD HD
01-133254	SCREW 6-32 X 1/4 BD HD
01-134827	SCREW 6-32 X 2 FIL HD
01-117189	STRIP, COMPONENT
01-114883	STUD FOR HANDLE
01-116645	SWITCH, ROTARY, 2 GANG, 3 POSITIO
01-117331	SWITCH, ROTARY, 2 GANG, 4 POSITIO
01-181857	WASHER #6 SPLIT
01-112328	WASHER, LOCK 3/8 OD INT

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5200 W. KINZIE STREET.
CHICAGO, ILLINOIS 60644
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SIMPSON 389-3L TEMP TESTER

PART NUMBER	DESCRIPTION
01-401852	WASHER, LOCK #4 SPLIT
01-401859	WASHER, LOCK #2 INT
01-401862	WASHER, LOCK #6 INT

TESTER ACCESSORY SECT

- 00416	*100 FT THERMISTOR LEAD
- 00216	*30 FT THERMISTOR LEAD
- 00415	*50 FT THERMISTOR LEAD
- 05262	*EVER-READY CARRYING CASE
- 00789	*FREE AIR TEMPERATURE PROBE
- 14020	*REPLACEMENT METER
- 00790	*SURFACE TEMPERATURE PROBE

METER SECTION

10-290386	ARMATURE ASSEMBLY
03-360689	BASE
00-007436	BRIDGE & BUMPER ASSY-TOP
00-007435	BRIDGE ASSY-BOTTOM
00-006403	BUMPER ASSY
10-100152	COIL ASSY.
03-260295	COVER
10-867582	COVER ASSEMBLY front panel + glass
03-210086	DIAL BLANK
03-7400989	DIAL PRINTED
01-119256	JEWEL-GLASS-TOP
01-119661	JEWEL-GLASS-BOTTOM
03-111124	MAGNET ASSEMBLY
01-114428	NUT HEX MOVT
02-315074	PIVOT-STEEL
01-134945	SCREW DIAL 3-48 X 3/16
01-114061	SCREW FINISHING 3-48-1/4
01-111260	SPRINGS-TOP & BOTTOM
01-114547	WASHER, LOCK #3 SPLIT
03-310921	YOKE

* NOTE ITEMS AVAILABLE FROM AUR

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